

CLAIMS

What is claimed as the invention is:

1. A mattress comprising:

an innerspring having a plurality of spring elements arranged in an array and defining a first support side, a second support side parallel to the first support side, and a perimeter about the first and second support sides;

a foam deck adjacent one of the support sides of the innerspring, and

a foam encasement about the innerspring and in contact with the foam deck.

2. The mattress of claim 1 further comprising a pad adjacent a support side of the innerspring opposite the foam deck.

3. The mattress of claim 2 further comprising a foam topper adjacent the pad.

4. The mattress of claim 1 wherein the foam deck has first and second parallel and spaced apart panels, and a web structure between the panels, and the foam encasement extends into the web structure.

5. The mattress of claim 2 wherein the foam encasement is in contact with the pad.

6. The mattress of claim 1 wherein the foam encasement forms an exterior wall which extends from the foam deck to the pad.

7. The mattress of claim 1 wherein the foam encasement is in contact with spring elements of the innerspring.

8. The mattress of claim 1 wherein the foam topper is adhesively attached to the pad.

9. The mattress of claim 1 wherein the foam encasement is molded about the foam deck and innerspring.

10. The mattress of claim 2 wherein perimeters of the foam deck and foam topper are aligned with a perimeter of the innerspring.

11. The mattress of claim 1 further comprising at least one additional foam component.

12. The mattress of claim 2 wherein the foam deck, innerspring, pad and foam topper are connected together by the foam encasement.

13. The mattress of claim 1 further comprising a second foam deck adjacent a support side of the innerspring, and wherein the foam encasement is in contact with the second foam deck.

14. The mattress of claim 2 wherein the foam topper has a generally planar surface in contact with a support surface of the innerspring, and a sculpted surface facing away from the innerspring.

15. The mattress of claim 2 wherein the foam topper further comprises at least one side rail.

16. The mattress of claim 2 wherein the foam encasement extends under a perimeter area of the foam topper.

17. The mattress of claim 2 wherein the foam encasement contacts an underside of the foam topper which is in contact with a support surface of the innerspring.

18. The mattress of claim 1 further comprising at least one layer of padding adjacent the foam topper, and upholstery over the layer of padding.

19. The mattress of claim 1 wherein the at least one additional foam component is in the form of a box beam.

20. The mattress of claim 1 further comprising a foam component which extends from a panel of the foam deck and engages with the innerspring.

21. The mattress of claim 1 further comprising separate foam components engaged with the innerspring.

22. A flexible support structure comprising:

an innerspring having a plurality of interconnected coils with the axes of the coils generally parallel and the ends of the coils generally aligned in planes which define first and second support sides of the innerspring;

a foam deck having a first panel parallel to and spaced from a second panel, the first and second panels of the foam deck connected by at least one web therebetween, and one of the panels of the foam deck positioned adjacent to a first support side of the innerspring,

and an encapsulating foam in contact with the foam deck and the innerspring.

23. The flexible support structure of claim 21 wherein the encapsulating foam extends between the first and second panels of the foam deck.

24. The flexible support structure of claim 21 further comprising a foam topper positioned adjacent a second support side of the innerspring.

25. The flexible support structure of claim 23 wherein the encasement foam is in contact with the foam topper.

26. A resilient support structure comprising:

a flexible core having opposed planar sides and a perimeter which extends from one planar side to an opposite planar side;

a foam deck positioned under the flexible core adjacent one of the planar sides of the flexible core;

and a foam encasement which forms an exterior wall around a perimeter of the flexible core and contacts the foam deck, and

a foam topper positioned on top of the flexible core adjacent a planar side of the flexible core opposite the foam deck.

27. The resilient support structure of claim 26 wherein the foam deck has spaced-apart panels, and the foam encasement extends between the spaced-apart panels of the foam deck.

28. The resilient support structure of claim 26 wherein the foam encasement is molded about the foam deck and the flexible core.

29. The resilient support structure of claim 26 further comprising an insulator pad on one of the planar sides of the flexible core opposite the foam deck.

30. The resilient support structure of claim 29 wherein the foam encasement is attached to the foam deck, flexible core and insulator pad.

31. The resilient support structure of claim 26 wherein the foam encasement is cured about the perimeter coils of the flexible core.

32. The resilient support structure of claim 26 wherein a density of the foam encasement is different than a density of the foam deck.

33. The resilient support structure of claim 26 further comprising a foam topper adjacent the insulator pad.

34. The resilient support structure of claim 33 wherein the foam topper has side rails and a sculpted support surface.

35. The resilient support structure of claim 33 wherein the foam topper is permanently bonded to the insulator pad.

36. The resilient support structure of claim 33 wherein a density of the foam topper is different than a density of the foam encasement.

37. The resilient support structure of claim 33 further comprising an upholstery layer over the foam topper.

38. The resilient support structure of claim 26 in the form of a one-sided mattress with the foam deck located at a bottom of the mattress.

39. The resilient support structure of claim 26 wherein the foam topper comprises rails which are generally aligned with walls of the foam encasement.

40. A method of making a support device having an innerspring and foam components which are structurally integrated with the innerspring, the method comprising the steps of:

providing a foam deck which has a bottom surface and a top surface;

placing a support side of an innerspring on a top surface of the foam deck and aligning a perimeter of the innerspring with a perimeter of the foam deck;

placing an insulator pad on a support side of the innerspring opposite the foam deck and aligning a perimeter of the insulator pad with the perimeter of the innerspring

assembly, and

introducing a foam encasement material about a perimeter of the foam deck, innerspring and insulator pad to form a foam encasement which bonds to the foam deck, innerspring and insulator pad.

41. The method of claim 40 further comprising the step of bonding a foam topper to the insulator pad.

42. The method of claim 41 further comprising the step of aligning rails of the foam topper with walls of the foam encasement.

43. The method of claim 40 further comprising the step of applying upholstery over the foam topper and over exterior walls of the foam encasement.

44. The method of claim 40 further comprising the step of placing a foam topper on the insulator pad opposite the innerspring and introducing the foam encasement material about the perimeter of the foam deck, innerspring and insulator pad and foam topper to form a foam encasement which bonds to the foam deck, innerspring, insulator pad and foam topper.

45. The method of claim 40 wherein the step of introducing a foam encasement material about the perimeter of the foam deck, innerspring and insulator pad is performed by injecting the foam encasement material into a mold.

46. A mattress core comprising:

a flexible core;

a foam deck which underlies the flexible core;

an insulator pad which overlies the flexible core;

and a foam encasement which substantially surrounds a perimeter of the flexible core, foam deck and insulator pad.

47. The mattress core of claim 46 further comprising a foam topper on top of the insulator pad opposite the flexible core.
48. The mattress core of claim 46 wherein the foam deck has at least two spaced apart panels, and the foam encasement extends between the spaced apart panels of the foam deck.
49. The mattress core of claim 47 wherein the foam encasement contacts the foam topper.
50. The mattress core of claim 46 wherein the flexible core is an innerspring.
51. The mattress core of claim 46 wherein the flexible core is a foam structure.
52. The mattress core of claim 46 wherein the insulator pad is formed of polyester fibers to which the foam encasement is bonded.
53. The mattress core of claim 46 wherein the insulator pad is a polyurethane pad to which the foam encasement is bonded.
54. The mattress core of claim 47 wherein the foam topper is adhesively bonded to the insulator pad.
55. The mattress core of claim 50 wherein the foam encasement is formed about coils of the innerspring.